



MMBT5551

NPN SILICON TRANSISTOR

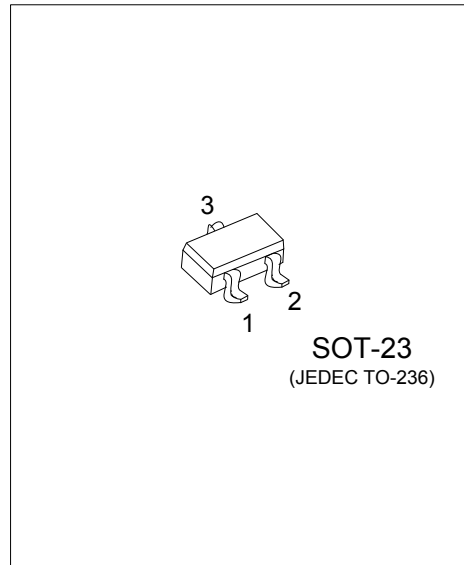
HIGH VOLTAGE SWITCHING TRANSISTOR

DESCRIPTION

The UTC **MMBT5551** is a high voltage fast-switching NPN power transistor. It is characterized with high breakdown voltage, high current gain and high switching speed.

FEATURES

- * High Collector-Emitter Voltage: $V_{CE0}=160V$
- * High current gain



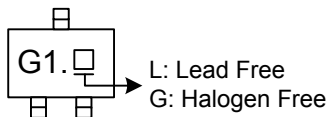
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
MMBT5551L-x-AE3-R	MMBT5551G-x-AE3-R	SOT-23	B	E	C	Tape Reel

Note: Pin Assignment: B: Base E: Emitter C: Collector

<p>MMBT5551G-x-AE3-R</p> <ul style="list-style-type: none"> (1) Packing Type (2) Package Type (3) Rank (4) Green Package 	<ul style="list-style-type: none"> (1) R: Tape Reel (2) AE3: SOT-23 (3) x: refer to Classification of h_{FE} (4) G: Halogen Free and Lead Free, L: Lead Free
--	---

MARKING



MMBT5551

NPN SILICON TRANSISTOR

■ ABSOLUTE MAXIMUM RATINGS (T_A= 25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector -Base Voltage	V _{CBO}	180	V
Collector -Emitter Voltage	V _{CEO}	160	V
Emitter -Base Voltage	V _{EBO}	6	V
DC Collector Current	I _C	600	mA
Power Dissipation	P _D	350	mW
Junction Temperature	T _J	+150	°C
Storage Temperature	T _{STG}	-40 ~ +150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ _{JA}	357	°C/W
Junction to Case	θ _{JC}	104	°C/W

■ ELECTRICAL CHARACTERISTICS (T_A= 25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	V _{CBO}	I _C =100μA, I _E =0	180			V
Collector-Emitter Breakdown Voltage	V _{CEO}	I _C =1mA, I _B =0	160			V
Emitter-Base Breakdown Voltage	V _{EBO}	I _E =10μA, I _C =0	6			V
Collector Cut-off Current	I _{CBO}	V _{CB} =120V, I _E =0			50	nA
Emitter Cut-off Current	I _{EBO}	V _{BE} =4V, I _C =0			50	nA
DC Current Gain(note)	h _{FE}	V _{CE} =5V, I _C =1mA	80			
		V _{CE} =5V, I _C =10mA	80	160	400	
		V _{CE} =5V, I _C =50mA	80			
Collector-Emitter Saturation Voltage	V _{CE(SAT)}	I _C =10mA, I _B =1mA			0.15	V
		I _C =50mA, I _B =5mA			0.2	V
Base-Emitter Saturation Voltage	V _{BE(SAT)}	I _C =10mA, I _B =1mA			1	V
		I _C =50mA, I _B =5mA			1	V
Current Gain Bandwidth Product	f _T	V _{CE} =10V, I _C =10mA, f=100MHz	100		300	MHz
Output Capacitance	C _{ob}	V _{CB} =10V, I _E =0, f=1MHz			6.0	pF
Noise Figure	NF	I _C =0.25mA, V _{CE} =5V R _S =1kΩ, f=10Hz ~ 15.7kHz			8	dB

Note: Pulse test: PW<300μs, Duty Cycle<2%

■ CLASSIFICATION OF h_{FE}

RANK	A	B	C
RANGE	80-170	150-240	200-400

■ TYPICAL CHARACTERISTICS

Fig.1 Collector Output Capacitance

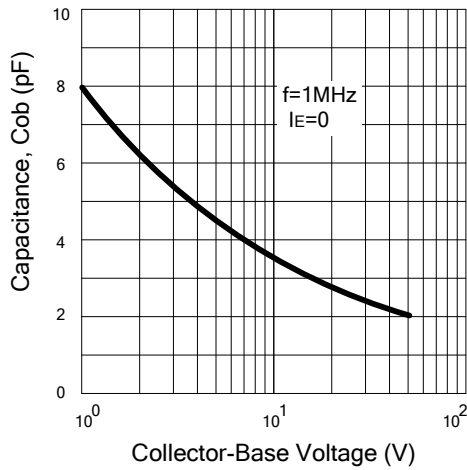


Fig.2 DC Current Gain

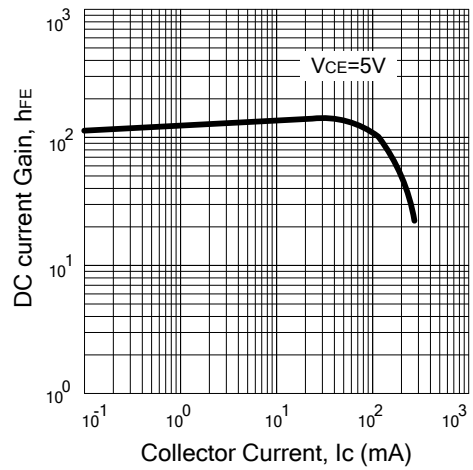


Fig.3 Base-Emitter on Voltage

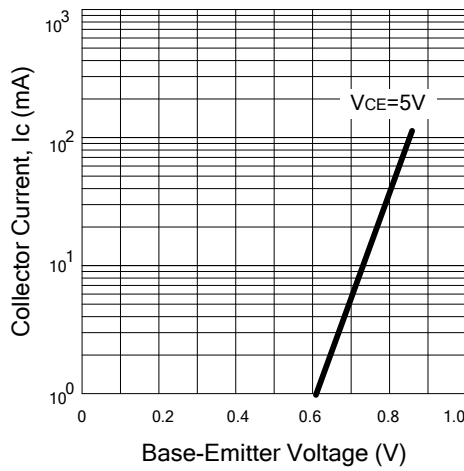


Fig.4 Saturation Voltage

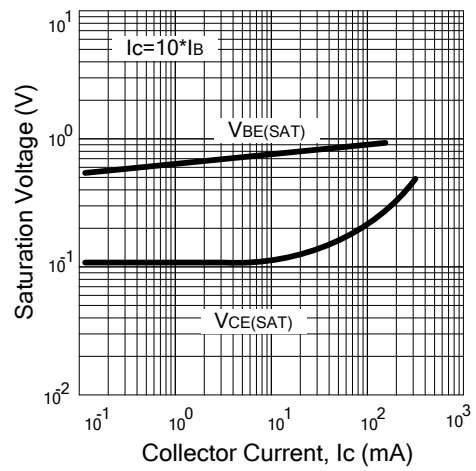
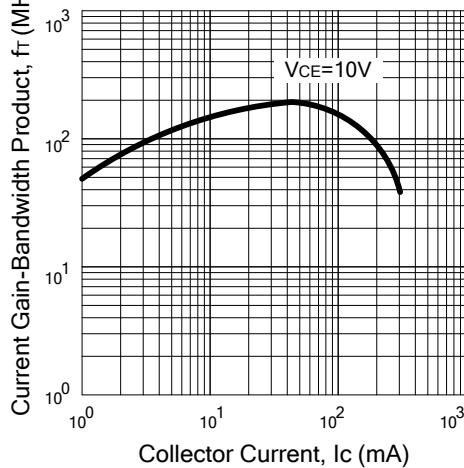
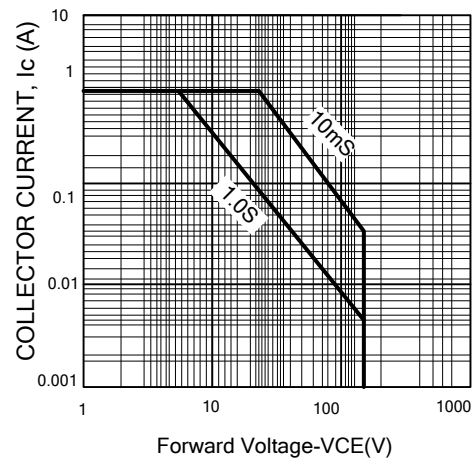


Fig.5 Current Gain-Bandwidth Product



SAFE OPERATING AREA



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. UTC reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.

